Distributed Generation (DG) equal to or less than 10 kW

Information, application process and fees

Alpine ENERGY

Contents

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Distributed generation

You can generate and store some or all of your own electricity in a variety of ways. These include using solar energy (photovoltaic cells), wind, water (hydroelectric) or fossil fuels such as diesel or natural gas. You can even store some energy in batteries.

A generator, by following procedures and standards to maintain electrical safety for people and property, can also be connected to your local electricity distribution network through your fuse board and meter board, enabling you to inject any electricity that is surplus to your requirements into the network and sell it to an energy retailer.

We provide a network that connects generators, the national grid and consumers. This enables generators and consumers to sell to and buy from their parties of choice. We are not an electricity retailer, but our network does provide the means for retailers to convey or transport electricity through to its buyers. All generators therefore have to either; sell their electricity to a retailer that is contracted to access the network, or the generator can be an electricity retailer in its own right.

The information in this document applies to those generators that propose to be connected to our distribution network and have a capacity of 10 kW or less. These generators are likely to be installed in residential or small business premises. Separate conditions and procedures apply to generating installations larger than 10 kW.

In 2010 the Government issued regulations pertaining to small-scale distributed generation and this document has been issued in compliance with these. Our intention is to help you to

understand our requirements and the steps that you will need to take to connect your generator to our network.

Two application paths

The process adopted by Alpine Energy Limited (AEL) conforms to the Electricity Industry Participation Code 2010 Part 6: Connection of Distributed Generation (the Code). These requirements can be viewed on the Electricity Authority website.

You are advised to make an application under Part 1A, which allows for a faster application process for equipment that meets certain minimum requirements.

You may apply under Part 1A if your equipment:

- is designed and installed in accordance with AS/NZS4777.1
- has an inverter that has a 'Declaration of Conformity[1]' which meets all relevant parts of AS/NZS4777.2
- has protection settings that meet or connection and operation standards
- complies with our connection and operation standards and congestion management policy.

[1] Must have been issued by International Accreditation New Zealand (IANZ) or a lab recognised by IANZ

A list of preapproved inverters can be found at www.solaraccreditation.com.au

Otherwise, an application under Part 1 must be used.

Note that a Part 1A application carries a reduced fee compared to a Part 1 application; see the fees section or Section 6.5 of the Code for details.

In accordance with the Code, we allow default export limits of 10 kW unless we publish otherwise.

Whichever way you apply, you must talk to us as early in the process as possible.

Technical requirements

You must ensure that your generator will not compromise safety and will not adversely affect other parties who are connected to our network. You will need to use a registered electrician to install your system and you will need to obtain an electrical Certificate of Compliance (CoC).

Regardless of the type of generator you select, you will need to comply with the following standards, as well as referenced standards: *(Please ensure you are complying with the latest standard.)*

- AS/NZS 4777.1 – Grid connection of energy systems via inverters – installation requirements
- AS/NZS 4777.2 – Grid connection of energy systems via inverters – inverter requirements
- AS/NZS 3000 – Electrical installations (Australian/New Zealand Wiring Rules)
- AS/NZS 5033 – Installation and Safety Requirements for Photovoltaic (PV) arrays.

Copies of these standards are available from the website www.standards.govt.nz.

The AS/NZS 4777.1 to AS/NZS 4777.2 standards apply to distributed generation systems that are connected to an electricity network via inverters. They focus primarily on solar panel systems, but they can also be applied to other generator types. If you are contemplating a non-inverter system then you will need to discuss your specific plans and requirements with us.

Additional technical information can be found in our DG Connection and Operation Standard on our website.

Our control policy

We will reserve the right to disconnect a generator for the purposes of maintaining safety or integrity of supply or for the purpose of obtaining access to network equipment for maintenance renewal or operating. If the generator is co-sited with a load, this could mean either disconnection of the generator from the premises or complete site de-energisation at the connection to the network. More information on this can be found in our Distributed Generation Connection and Operation Standard which is available on our website.

Fees

Current fees charged can be found in Schedule 6.5 of the Code. At the time of writing these were:

Description of fees	$ (exclusive of GST)
Distributed generation 10 kW or less in total (EIPC 2010, Part 1 of Schedule 6.1 application)	
Application fee EIPC 2010, clause 2(2)(c)	200
Fee for observation of testing and inspection EIPC 2010, clause 7(5)	60
Distributed generation 10 kW or less in specified circumstances Part 1A of Schedule 6.1 application	
Application fee EIPC 2010, clause 9B(2)(c)	100
Fee for inspection EIPC 2010, clause 9C(3)	60
Deficiency fee EIPC 2010, clause 9E(4)	80
Distributed generation above 10 kW Part 2 of Schedule 6.1 application	
Application fee for **distributed generation** with **nameplate capacity** of more than 10 kW but less than 100 kW EIPC 2010, clause 11(2)(c)	500
Application fee for **distributed generation** with **nameplate capacity** of 100 kW or more in total but less than **1 MW** EIPC 2010, clause 11(2)(c)	1,000
Application fee for **distributed generation** with **nameplate capacity** of **1 MW** or more EIPC 2010, clause 11(2)(c)	5,000
Fee for observation of testing and inspection of **distributed generation** with **nameplate capacity** of more than 10 kW but less than 100 kW EIPC 2010, clause 22(5)	120
Fee for observation of testing and inspection of **distributed generation** with **nameplate capacity** of 100 kW or more EIPC 2010, clause 22(5)	1,200

Process under part 1A of the code

Select a generator type:

The generator type will depend on its location and the source of energy available. Solar panels, small wind turbines and micro-hydro generators are the most common. Connection to the network must be safe and must not interfere with the quality of electricity supplied to other connected parties. We require equipment to comply with internationally recognised standards.

Making an enquiry:

Once a suitable generator has been identified and all of the related information is available, a complete application on the prescribed form (found on our website) for connection to our

network may be submitted. The application fee invoice will be sent to you upon receipt of your solar application. You will be advised within 2 working days whether the information you have provided is complete.

Eligibility to connect to the network:

We will respond to your complete application within 10 working days, advising whether you may connect. If you are not eligible to connect, we will provide a detailed explanation of the basis

for our decision and what changes you will need to make to be eligible. If you disagree with our decision, there is a dispute resolution path you may take; details are in Schedule 6.3 of the Code. Maximum export on the AEL residential network is 5 kW per phase. Ref: AS/NZS 4777.1 – Grid connection of energy systems via inverters – installation requirements.

If you are eligible to connect, we will advise if there are likely to be any additional costs associated with the connection. You should now consider future operational issues, such as maintenance and an arrangement with an electricity retailer. These should include the following:

- acquisition of an import export smart meter
- agreement for the sale of surplus electricity - Export
- the tariffs that your retailer will apply.

Proceeding towards connection:

To be allowed to connect you must:

- use a registered electrician familiar with relevant regulations and standards for the work
- comply with all relevant latest regulations and standards
- provide an Electrical Certificate of Compliance (CoC) for the inspection
- make sure that appropriate metering arrangements are made through your retailer.

Process under part 1 of the code

Select a generator type:

The generator type will depend on its location and the source of energy available. Solar panels, small wind turbines and micro-hydro generators are the most common. Connection to the network must be safe and must not interfere with the quality of electricity supplied to other connected parties. We require equipment to comply with internationally recognised standards.

Making an enquiry:

Once a suitable generator has been identified and all the related information is available, an application on the prescribed form (found on our website) for connection to our network may be submitted. The application fee invoice will be sent to you upon receipt of your solar application. You will be advised within 5 working days whether the information you have provided is complete. If it is, we will then assess the information and decide if the proposed generator meets our applicable safety, operational and technical standards.

Eligibility to connect to the network:

We will respond to your application within 30 working days, advising whether you may connect. If AEL is unable to respond within this time owing to resource or other constraints, we will request from you an extension of another 20 working days.

If you are not eligible to connect, we will provide a detailed explanation of the basis for our decision and what changes you will need to make to be eligible.

If you are eligible to connect, we will advise if there are likely to be any additional costs associated with the connection. You should now consider future operational issues, such as maintenance and an arrangement with an electricity retailer.

These should include the following:

- acquisition of input and output meters
- agreement for the sale of surplus electricity
- the tariffs that your retailer will apply.

Proceeding towards connection:

To be allowed to connect you must:

- use a registered electrician familiar with relevant regulations and standards for the work
- comply with all relevant regulations and latest standards
- get an Electrical Certificate of Compliance (CoC)
- make sure that appropriate metering arrangements are made through your retailer.

The response times

This requires submitting an application on our prescribed form, which is available from our website www.alpineenergy.co.nz. This must be done within 12 months of your receiving our response to your initial application. The results of any investigative studies that you may have undertaken also need to be submitted at this time.

We aim to assess all Distributed Generation applications as efficiently as possible and will always endeavour to provide a decision as early as we can within statutory response timeframes set under Part 6, Schedule 6.1 of the Electricity Distribution Code and these may vary depending on the size of your proposed generation and its installed location.

These timeframes commence once all required information has been provided.

- For systems with a total capacity of 10 kW or less, a decision is required within 10 working days of receiving a complete application.

If your application is declined, we will provide detailed reasons and advise what steps you will need to take to ensure approval.

If your application is approved, we will provide with our response:

- Detailed description of the related conditions of approval together with the reasons for these.
- If the connection of your DG is likely to require expenditure on the network then we will advise you accordingly. This would mean that approval to connect would be subject to agreement on additional terms relating to payment for part or all of the related expenditure on the network.

Notify us and get connected:

When all is in order, you will need to notify us that you intend to proceed with connection. You must provide this notice within 10 working days of receiving our advice that you are eligible to connect unless there has been mutual agreement to a longer period. We will proceed as soon as is practicable with any related work that is required on our network. Unless we have other arrangements with you, you will be connected on the regulated terms as per Schedule 6.2 of the Code.

The final step **before** activating the connection is inspection and testing. You must provide completed electrical documentation (CoC) so that we can send a network-approved solar inspector to certify (ROI) the site and approve connection to the network.

The inspection of the site and installation of the metering equipment is by in-house electrical and solar inspectors approved by us to work on the network or their nominated representatives. There is a separate charge for their inspection.

A meter change to import/export via the trader is directly billed to the customer (ICP owner).

When the inspection and testing is complete, you must provide us with a written test report that includes suitable evidence that the metering installation complies with the required standards and rules.

In some cases, a special line charge may apply that reflects any additional costs that may have been created by the connection of the generator.

Getting connected:

The final step before activating the connection is inspection and testing. You must provide completed electrical documentation (COC) so that we can send a network approved solar inspector to certify (ROI) the site and approve connection to the network.

The inspection of the site and installation of the metering equipment is by in-house electrical and solar inspectors approved by us to work on the network or their nominated representatives. There is a separate charge for their inspection.

A meter change to import/export via the trader is directly billed to the customer (ICP owner).

When the inspection and testing is complete, you must provide us with a written test report that includes suitable evidence that the metering installation complies with the required standards and rules.

The role of your retailer:

We are a distribution business and not an energy or retailing business (as defined in Part 3 of the Act) we are prohibited from purchasing the surplus electricity from your generation.

You must discuss the options for the sale of the electricity to be produced by your generation with your retailer. The retailer will usually enter into a contract with you for the purchase of the electricity once the generation has been approved for connection to the network.

Before committing to the project, you are advised to consider future operational matters, such as maintenance of your plant and a suitable arrangement with an electricity retailer. This retailer arrangement will need to address:

- Acquisition and reading of input and output meters.
- Agreement for the sale of surplus electricity.
- The tariffs that your retailer will apply.

As a generator, you are responsible for your metering installation. Your electricity retailer can look after this for you. It may arrange for a metering service provider to call and fit a second meter to measure exported energy or a single meter that measures the amount of electricity both imported and exported at your installation.

- Authorisation must be received from your retailer prior to connection (livening and energisation) to the network.

Change of occupancy or configuration

In the event that the occupancy of your property changes, it is important that the new operator of the generation equipment understands and accepts the responsibilities and obligations of having a distributed generator connected to AEL's network.

If you wish to make any changes to the DG installation at any time, you will be required to submit a new application for connection using the prescribed form.

However, if you are a new property owner, the retailer can address matters regarding changes to your electricity account.

Limiting your generation

Our network was originally designed to distribute electricity in a single direction from large grid substations. While generators with a capacity of up to around 10 kW are unlikely to materially affect network performance, larger generators may give rise to **"export congestion"** under the Code.

Under the Code, we have the ability to manage and, where necessary, constrain generation to ensure the safe and reliable operation of the network. This includes limiting the output of generators where export capacity is constrained or where continued operation would risk overloading network assets or voltage rise, affecting power quality.

Accordingly, we reserve the right to:

- **Decline an application** to connect distributed generation where the proposed connection is not consistent with connection and operation standards or would create unacceptable network impacts;
- **Approve a connection and revise your export limits or constrained connection conditions**; and
- **Constrain or curtail generation output** from time to time where required to manage export congestion and maintain network security and quality of supply.

Where multiple applications are received for connection within the same part of the network, the Code (in Schedule 6.1 processes for distributed generation above 10 kW) allows us to assess those applications in the context of **limited network capacity**, and to prioritise or manage them accordingly, provided we act consistently with the purpose and principles of Part 6